

Research Committee report for August 2016

**Summer offers opportunities to travel and attend conferences as well as to observe and image.**

Solar System: Dan Silber took a stunning image of a lightning strike from a cloud to the ground at Jenny Jump. Several features on the Moon, especially Crater Clavius were taken by Clif Ashcraft, who also imaged greenish Uranus and Neptune.

Stars: In speckle interferometry Clif may have accidentally found a new double star. Stay tuned. Jim Nordhausen flying solo observed an exoplanet transit of almost 1% dimming in Cygnus and sent in Sperry Observatory's first positive report to the KELT project. His data changed the ephemeris for this object by half an hour. I took overlapping spectra of all of the stars in the globular cluster M5, and will try to analyze as many of them as possible.

Deep Sky: Images included Helder Jacinto's M27 Dumbbell Nebula, the far globular cluster M71, Barnard's dark nebulae near Tarazed in Aquila, and SH2-101, the Tulip Nebula in Cygnus, as well as the invisible black hole Cygnus X-1. Tolga Gumusayak has imaged the Andromeda galaxy M31 in RGB and Hydrogen alpha (assisted by Clif and me), and also taken a long exposure of the wide field around the Elephant's Trunk Nebula. These efforts were aided by the new dome he and I set up at Jenny Jump.

Presentations: Several members gave talks at other places around the country. Clif spoke at Stellafane at the 2016 Hartness House Workshop: Sub-Arcsecond Spatial Resolution Imaging. He discussed "Speckle Interferometry of Double Stars From My Backyard Observatory" and "High Resolution Planetary Imaging With a Video Camera: Lucky Imaging". He was also treated to a view through George Ellery Hale's original spectrohelioscope, something he has wanted to do since he read about it when he was 14. I gave talks on "Exoplanets" and "Meteorites and the Formation of the Earth" (with Mark Zdziarski) at David Levy's Adirondack Astronomy Retreat in upstate New York. I also attended (remotely by GoToMeeting) the KELT annual workshop in Nashville. I am especially excited by the ancillary science (other than the exoplanet transits) which includes "free" observations in the same field of view, such as eclipsing binaries, eclipsing dust clouds, rings, variable stars, winds, Be stars, mass-metallicity relationships, young clusters, and stellar rotation (gyrochronology). Later, the announcement by the French of an exoplanet around Proxima Centauri, in its habitable zone, was exciting.

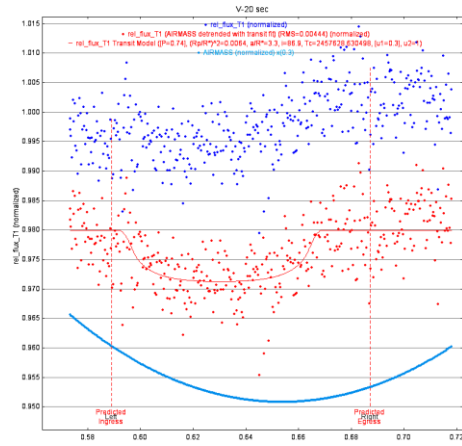
Other Activities: A calendar photo project was proposed by Tolga as a collaborative learning experience. The first session included Clif and me helping to image M31. There was a lively email discussion on types of cameras and equipment to be recommended for beginners in astrophotography of deep sky objects, including comments by Stan Honda. Tolga has shared some interesting ATODs (Astronomy Term of the Day) by Rishabh Naakna on Facebook.

If you ever want to be removed from an AAI email list (such as [research@asterism.org](mailto:research@asterism.org)), send a message to the club president ([president@asterism.org](mailto:president@asterism.org)), but remember that this is a volunteer organization, so be a little patient.

Respectfully submitted, Mary Lou West, Research Committee Chair



Lightning at JJ by Dan Silber



Transit of exoplanet in Cygnus by Jim Nordhausen



Tulip Nebula by Helder Jacinto



M31 by Tolga Gumusayak, Clif Ashcraft, Mary Lou West



Tolga Gumusayak and Mary Lou West's Small Dome